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OHUTUS. OSA 2-7: ERINÕUDED PESUMASINATELE

Household and similar electrical appliances - Safety -  
Part 2-7: Particular requirements for washing  
machine

## EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

<p>See Eesti standard EVS-EN IEC 60335-2-7:2023 sisaldab Euroopa standardi EN IEC 60335-2-7:2023 ingliskeelset teksti.</p> <p>Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas</p> <p>Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 10.11.2023.</p> <p>Standard on kättesaadav Eesti Standardimis- ja Akrediteerimiskeskusest.</p>	<p>This Estonian standard EVS-EN IEC 60335-2-7:2023 consists of the English text of the European standard EN IEC 60335-2-7:2023.</p> <p>This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation and Accreditation.</p> <p>Date of Availability of the European standard is 10.11.2023.</p> <p>The standard is available from the Estonian Centre for Standardisation and Accreditation.</p>
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English Version

Household and similar electrical appliances - Safety - Part 2-7:  
Particular requirements for washing machines  
(IEC 60335-2-7:2019)

Appareils électrodomestiques et analogues - Sécurité -  
Partie 2-7: Exigences particulières pour les machines à  
laver le linge  
(IEC 60335-2-7:2019)

Sicherheit elektrischer Geräte für den Hausgebrauch und  
ähnliche Zwecke - Teil 2-7: Besondere Anforderungen für  
Waschmaschinen  
(IEC 60335-2-7:2019)

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Europäisches Komitee für Elektrotechnische Normung

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## European foreword

This document (EN IEC 60335-2-7:2023) consists of the text of IEC 60335-2-7:2019 prepared by IEC/TC 61 "Safety of household and similar electrical appliances".

The following dates are fixed:

- latest date by which this document has to be (dop) 2024-08-02 implemented at national level by publication of an identical national standard or by endorsement
- latest date by which the national standards (dow) 2025-08-02 conflicting with this document have to be withdrawn

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# INTERNATIONAL STANDARD

## NORME INTERNATIONALE

**Household and similar electrical appliances – Safety –  
Part 2-7: Particular requirements for washing machines**

**Appareils électrodomestiques et analogues – Sécurité –  
Partie 2-7: Exigences particulières pour les machines à laver le linge**



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# INTERNATIONAL STANDARD

## NORME INTERNATIONALE

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**Household and similar electrical appliances – Safety –  
Part 2-7: Particular requirements for washing machines**

**Appareils électrodomestiques et analogues – Sécurité –  
Partie 2-7: Exigences particulières pour les machines à laver le linge**

INTERNATIONAL  
ELECTROTECHNICAL  
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## INTERNATIONAL ELECTROTECHNICAL COMMISSION

**HOUSEHOLD AND SIMILAR ELECTRICAL APPLIANCES –  
SAFETY –****Part 2-7: Particular requirements for washing machines**

## FOREWORD

- 1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as “IEC Publication(s)”). Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
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International Standard IEC 60335-2-7 has been prepared by IEC technical committee 61: Safety of household and similar electrical appliances.

This eighth edition cancels and replaces the seventh edition published in 2008, Amendment 1: 2011 and Amendment 2:2016. This edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous edition:

- requirements for steam generators in 3.1.9, 3.6.101, 19.101, 22.106, 22.107;
- additional definitions for washing machine types in 3.5.101, 3.5.102, 3.5.103;
- revised temperature limits for external accessible surfaces in 11.3 and 11.8;
- revised test procedure for the spillage test in 15.2;

- additional requirements for appliances that are controlled by programmable electronic circuits that limit the number of heating elements and motors from being energised at the same time, Subclause 22.108.

The text of this International Standard is based on the following documents:

FDIS	Report on voting
61/5798/FDIS	61/5839/RVD

Full information on the voting for the approval of this International Standard can be found in the report on voting indicated in the above table.

This document has been drafted in accordance with the ISO/IEC Directives, Part 2.

A list of all parts of the IEC 60335 series, under the general title: *Household and similar electrical appliances – Safety*, can be found on the IEC website.

This part 2 is to be used in conjunction with the latest edition of IEC 60335-1 and its amendments. It was established on the basis of the fifth edition (2010) of that standard.

NOTE 1 When “Part 1” is mentioned in this standard, it refers to IEC 60335-1.

This part 2 supplements or modifies the corresponding clauses in IEC 60335-1, so as to convert that publication into the IEC standard: Safety requirements for washing machines.

When a particular subclause of Part 1 is not mentioned in this part 2, that subclause applies as far as is reasonable. When this standard states “addition”, “modification” or “replacement”, the relevant text in Part 1 is to be adapted accordingly.

NOTE 2 The following numbering system is used:

- subclauses, tables and figures that are numbered starting from 101 are additional to those in Part 1;
- unless notes are in a new subclause or involve notes in Part 1, they are numbered starting from 101, including those in a replaced clause or subclause;
- additional annexes are lettered AA, BB, etc.

NOTE 3 The following print types are used:

- requirements: in roman type;
- *test specifications: in italic type;*
- notes: in small roman type.

Words in **bold** in the text are defined in Clause 3. When a definition concerns an adjective, the adjective and the associated noun are also in bold.

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under "<http://webstore.iec.ch>" in the data related to the specific document. At this date, the document will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

NOTE 4 The attention of National Committees is drawn to the fact that equipment manufacturers and testing organizations may need a transitional period following publication of a new, amended or revised IEC publication in which to make products in accordance with the new requirements and to equip themselves for conducting new or revised tests.

It is the recommendation of the committee that the content of this publication be adopted for implementation nationally not earlier than 12 months or later than 36 months from the date of publication.

The following differences exist in the countries indicated below.

- 3.1.9: Different size cloths are used. The initial water temperature for machines without heating elements and without a wringer is 71 °C (USA).
- 6.2: IPX0 appliances are allowed (USA).
- 11.7: The test durations are different (USA).
- 15.101: The test is different (USA).
- 19.7: Appliances without a programmer are operated until steady conditions are established (USA).
- 19.101: A redundant set of contacts is not required (USA).
- 22.6: The test is different (USA).
- 22.101: The test is different (USA).
- Annex AA: The detergent and rinsing agent are different (USA).
- Annex BB: Different tests are carried out (USA).

## INTRODUCTION

It has been assumed in the drafting of this International Standard that the execution of its provisions is entrusted to appropriately qualified and experienced persons.

This standard recognizes the internationally accepted level of protection against hazards such as electrical, mechanical, thermal, fire and radiation of appliances when operated as in normal use taking into account the manufacturer's instructions. It also covers abnormal situations that can be expected in practice and takes into account the way in which electromagnetic phenomena can affect the safe operation of appliances.

This standard takes into account the requirements of IEC 60364 as far as possible so that there is compatibility with the wiring rules when the appliance is connected to the supply mains. However, national wiring rules may differ.

If an appliance within the scope of this standard also incorporates functions that are covered by another part 2 of IEC 60335, the relevant part 2 is applied to each function separately, as far as is reasonable. If applicable, the influence of one function on the other is taken into account.

When a part 2 standard does not include additional requirements to cover hazards dealt with in Part 1, Part 1 applies.

NOTE 1 This means that the technical committees responsible for the part 2 standards have determined that it is not necessary to specify particular requirements for the appliance in question over and above the general requirements.

This standard is a product family standard dealing with the safety of appliances and takes precedence over horizontal and generic standards covering the same subject.

NOTE 2 Horizontal and generic standards covering a hazard are not applicable since they have been taken into consideration when developing the general and particular requirements for the IEC 60335 series of standards. For example, in the case of temperature requirements for surfaces on many appliances, generic standards, such as ISO 13732-1 for hot surfaces, are not applicable in addition to Part 1 or part 2 standards.

An appliance that complies with the text of this standard will not necessarily be considered to comply with the safety principles of the standard if, when examined and tested, it is found to have other features that impair the level of safety covered by these requirements.

An appliance employing materials or having forms of construction differing from those detailed in the requirements of this standard may be examined and tested according to the intent of the requirements and, if found to be substantially equivalent, may be considered to comply with the standard.

## HOUSEHOLD AND SIMILAR ELECTRICAL APPLIANCES – SAFETY –

### Part 2-7: Particular requirements for washing machines

#### 1 Scope

This clause of Part 1 is replaced by the following.

This International Standard deals with the safety of electric washing machines for household and similar use, that are intended for washing clothes and textiles, their **rated voltage** being not more than 250 V for single-phase appliances and 480 V for other appliances.

This standard also deals with the safety of electric washing machines for household and similar use employing an electrolyte instead of detergent. Additional requirements for these appliances are given in Annex CC.

NOTE 101 Guidance is given in Annex DD for requirements that can be used to ensure an acceptable level of protection against electrical and thermal hazards for washing machines fitted with a power driven wringer.

Appliances not intended for normal household use but which nevertheless may be a source of danger to the public, such as appliances intended to be used by laymen in shops, in light industry and on farms, are within the scope of this standard.

NOTE 102 Examples of such appliances are washing machines for communal use in blocks of flats or in launderettes.

As far as is practicable, this standard deals with the common hazards presented by washing machines that are encountered by all persons in and around the home. However, in general, it does not take into account

- persons (including children) whose
  - physical, sensory or mental capabilities; or
  - lack of experience and knowledgeprevents them from using the appliance safely without supervision or instruction;
- children playing with the appliance.

NOTE 103 Attention is drawn to the fact that

- for washing machines intended to be used in vehicles or on board ships or aircraft, additional requirements may be necessary;
- in many countries additional requirements are specified by the national health authorities, the national authorities responsible for the protection of labour, the national water supply authorities and similar authorities.

NOTE 104 This standard does not apply to

- washing machines intended exclusively for industrial purposes (ISO 10472-2);
- appliances intended to be used in locations where special conditions prevail, such as the presence of a corrosive or explosive atmosphere (dust, vapour or gas);
- washing machines incorporating steam generating devices in which steam is produced at a pressure exceeding 50 kPa.

#### 2 Normative references

This clause of Part 1 is applicable except as follows.

*Addition:*

IEC 60584-1, *Thermocouples – Part 1: EMF specifications and tolerances*

IEC 60730-2-12:2015, *Automatic electrical controls for household and similar use – Part 2: Particular requirements for electrically operated door locks*

ISO 1817:2015, *Rubber, vulcanized or thermoplastic – Determination of the effect of liquids*

### 3 Terms and definitions

This clause of Part 1 is applicable except as follows.

#### 3.1 Definitions relating to physical characteristics

*Replacement:*

##### 3.1.9

##### **normal operation**

operation of the appliance under the following conditions.

The appliance is filled with dry textile material having a mass equal to the maximum mass stated in the instructions, and with the maximum quantity of water for which it is constructed. However, if the power input or current is higher when only 50 % of the textile material is used, the appliance is operated with this load instead if this gives more unfavourable conditions than the full load during the test of Clause 11.

Note 101 to entry: For some appliances incorporating a programmer, using the 50 % reduced load may result in automatic selection of a reduced wash programme.

The temperature of the water is

- 65 °C ± 5 °C for appliances without heating elements;
- 15 °C ± 5 °C for appliances without heating elements and intended for connection to the cold water supply only;
- 15 °C ± 5 °C for other appliances.

If the appliance does not incorporate a programmer, the water is heated to 90 °C ± 5 °C or as high as the construction will allow if lower, before starting the first washing period.

The textile material consists of pre-washed double-hemmed cotton sheets having dimensions approximately 700 mm × 700 mm and a specific mass between 140 g/m<sup>2</sup> and 175 g/m<sup>2</sup> in the dry condition.

For **impeller washing machines**, if the textile material does not move properly during operation,

- the quantity of textile material may be reduced until the maximum power input of the motor is attained; or
- a textile material comprising pre-washed double-hemmed cotton sheets, having dimensions of approximately 900 mm × 900 mm and a mass between 90 g/m<sup>2</sup> and 110 g/m<sup>2</sup> in the dry condition, may be used.

However, for **impeller washing machines**, in case of doubt, the test is carried out using the reduced quantity of textile material.